

## **Assessing the Impact of the National Science Foundation's Urban Systemic Initiative**

### ***Goal area of the activity***

This three-year study investigated the impact of the National Science Foundation's Urban Systemic Initiative Six-driver Model on mathematics and science reform in four sites: Chicago, El Paso, Memphis, and Miami. The major goals of this research study were: (1) to assess the impact of USI reforms by modeling relationships between latent variables (drivers) and sets of indicator variables; (2) to determine how reforms in mathematics and science curriculum and instruction affect teacher practices and student outcomes at the classroom level; and (3) to investigate the roles of leadership, resources, and policies related to systemic reform that foster or inhibit student achievement outcomes and outcome differences.

### ***Brief Summary***

To develop our understanding of the impact of NSF goals on USI reforms we conducted three mixed method studies: (1) The Study of the Enacted Mathematics and Science Curricula using classroom observations, teacher and student surveys; (2) The Policy Study using interviews with principals and district personnel; and (3) The Mathematics and Science Attainment Study studying student achievement data.

### ***Purpose***

The research is an assessment of both the efficacy of the USI driver model and the effectiveness of USI programs in increasing mathematics and science achievement and reducing the achievement gap. A mixed-methods approach was used to provide multiple indicators for each of the NSF Drivers. This approach involved a multi-site, multi-level case study design providing substantial variation in student population variables. The research focused on three structural dimensions: the school district, the school, and the classroom.

### ***Accomplishments/Results***

Teachers' classroom practices vary with respect to the amounts and types of staff development they have received; the capacity to engage in classroom instruction congruent with standards-based practices; and the impact at the classroom level on student achievement outcomes over the course of the reforms. Classroom observations and teacher and student survey results indicate that relatively small percentages of teachers are consistently engaged in implementing standards-related classroom practices. While USI reform efforts have positive impacts on student achievement, more sustained, in-depth PD programs targeted to specific classroom teacher needs may be necessary to significantly change teaching practices across the board. PD programs must simultaneously build the capacity for improvement as well as develop a school culture that nurtures a learning community in classrooms, schools, and school communities.

### ***Plans for the next 12 months***

Continue publication and dissemination of our findings including the completion of our book draft and several papers currently under review.